

Statistical Sciences Seminar Series



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“A New Convergent Approximation of the Optimal Recursive Parameter Estimator: Averaged Asymptotic Dynamic Analysis”

Tuesday, June 21, 2011
2:30 PM
TA-3, Bldg. 40, N125 (Moon Room)

Abstract: A key feature of a new recursive parameter estimator is its fast convergence. Here averaging theory supports this claim of fast convergence for system parameters, which heretofore has been supported only by example and by analogy with optimal nonlinear filtering. Averaging theory is also used to investigate possible computational shortcuts. Finally, it is proven that the likelihood function has a unique maximum for stable, observable, single output systems in state space form when the parameters are asymptotically identifiable and true values are in the model set. Then the new parameter estimator must converge globally with probability one to true parameter values when the trajectories of the parameter estimates remain in a certain bounded set.

Biography: Since 2000, Don has been teaching and researching at UCSC in both Dept. of Electrical and Dept. of Computer Engineering at UCSC, and is a researcher in the Center for Adaptive Optics there. Don is a Life Fellow of IEEE. Don retired as Professor of Engineering and Applied Science in the Electrical Engineering Department at UCLA in 1994, after 29 years there. He was also Professor of Anesthesiology at UCLA. In 1995 he served as Sen. Tom Harkin's (Dem. IA) Legislative Assistant in Defense Appropriations, Energy, Environment, Arms Control, and Veteran's Affairs as IEEE Congressional Fellow. He was a Fulbright Senior Fellow in Denmark in 1976-7 and in Norway in 1983-4, and he visited at DFVLR, Munich, 1969-70, U. Newcastle, Aus., 1989-90, U. Maryland, 1993-94, and Ajou U., Suwan, South Korea, 2006-07.